



UNITED STATES PATENT AND TRADEMARK OFFICE

1

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,792	10/11/2001	Efraim Berkovich	902.000/10108288	7240

7590 03/21/2006

Michael J. Strauss
Fulbright & Jaworski, L.L.P.
801 Pennsylvania Avenue, N.W.
Washington, DC 20004-2615

EXAMINER

TORRES, JOSEPH D

ART UNIT	PAPER NUMBER
----------	--------------

2133

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/973,792

Applicant(s)

BERKOVICH, EFRAIM

Examiner

Joseph D. Torres

Art Unit

2133


-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply


A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2006. 
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21,23,25 and 27-29 is/are pending in the application.
- 4a) Of the above claim(s) 27-29 is/are withdrawn from consideration. 
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-13,15-19,21,23 and 25 is/are rejected.
- 7) ☒ Claim(s) 7,14 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Newly submitted claims 27-29 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: claim 27 recites new language not previously searched or examined, "hashing said data vector and said distortions of said data vector to form respective hash indices; concatenating pairs of said hash indices; and storing said data vector in the memory at addresses referenced by each of said pairs of hash indices".

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 27-29 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 8 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Poole; Nigel T. et al. (US 5920900 A, hereafter referred to as Poole).

35 U.S.C. 102(b) rejection of claims 1, 8 and 15.

Poole teaches an inverse fault-tolerant decoder implemented for an error-correction code configured to transform a data vector into a plurality of predetermined index values (col. 7, lines 1-36 in Poole teach the translation of an input argument $A(x)$ into index values $R(x)$ by dividing $A(x)$ times $M(x)$ by a generator polynomial $G(x)$ to produce the remainder $R(x)$ whereby $M(x)$ is a hash multiplier; Note; dividing $A(x)*M(x)$ is a standard method for implementing an error correction code whereby $R(x)$ is generally considered a check for a fault-tolerant process of decoding; hence recovering $A(x)$ using $R(x)$ as a hash index is a fault-tolerant decoding method implemented from an error-correction code generator $G(x)$ configured to transform an input argument data vector $A(x)$ into a plurality of predetermined index values $R(x)$); logic configured to combine pairs of said index values by concatenating said pairs of said index values to form corresponding pairwise combined hash indices (Logic 508 in Figure 5 of Poole is logic configured to combine pairs of said index values by concatenating said pairs of said index values to form corresponding pairwise combined hash indices; Note: Logic 508 in Figure 5 concatenates the Next Table Index NTI with index values from Hashed Arguments 500); and data storage configured as a hash table referencing indexed data stored in the data dictionary corresponding to said pairwise combined hash indices (Hash Table 510 is data storage configured as a hash table referencing indexed data stored in the data dictionary corresponding to said pairwise combined hash indices).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 2-6, 9-13 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poole; Nigel T. et al. (US 5920900 A, hereafter referred to as Poole) in view of Berkovich et al. (Berkovich, S., El-Qawasmeh, E., "Reversing the Error-Correction Scheme for a Fault-Tolerant Indexing, " The Computer Journal, vol. 43, no. 1, pp. 54 - 64, January 2000).

35 U.S.C. 103(a) rejection of claims 2, 9 and 16.

Poole substantially teaches the claimed invention described in claims 1, 8 and 15 (as rejected above).

However Poole does not explicitly teach the specific use of bit-attribute data.

Art Unit: 2133

Berkovich et al. (hereafter referred to as Berkovich), in an analogous art, teaches that the data vectors used in an inverse fault-tolerant decoder are comprised of bit-attribute data (see col. 1, page 1 of Berkovich). The Examiner asserts that Poole teaches an inverse fault-tolerant decoder for digital data and Berkovich teaches an inverse fault-tolerant decoder for a specific type of digital data comprising bit-attribute data. One of ordinary skill in the art at the time the invention was made would have recognized that the digital data comprising bit-attribute data in Berkovich is digital data that the inverse fault-tolerant decoder in Poole was designed to decode.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Poole with the teachings of Berkovich by using the fault-tolerant decoder in Poole on a type of digital data for which it was designed such as bit-attribute data. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using the fault-tolerant decoder in Poole on a type of digital data for which it was designed such as bit-attribute data would have provided a fault-tolerant environment for a specific type of data for which the fault-tolerant decoder in Poole was designed.

35 U.S.C. 103(a) rejection of claims 3, 4, 10, 11 and 17.

Col. 2 on page 6 of Berkovich teaches a Golay [23,12,7] code; Note: paragraph [0097] on page 32 of the Applicant's specification teaches that a Golay [23,12,7] code is an

Art Unit: 2133

example of an inverse error correction code hence a decoder for decoding a Golay [23,12,7] code is an inverse fault-tolerant decoder.

35 U.S.C. 103(a) rejection of claims 5, 12 and 18.

Each of the buckets of a Golay code of Hamming distance 2 comprise border vector types of hamming distance 2 located at a border of a decoding sphere and non-border vector types of Hamming distance less than 2 located interior to said decoding sphere.

35 U.S.C. 103(a) rejection of claims 6, 13 and 19.

See Case #1, Case #2 and Equations 12, 13 and 14 on page 8 of Berkovich.

4. Claims 21, 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poole; Nigel T. et al. (US 5920900 A, hereafter referred to as Poole) in view of Cichelli; Richard J. et al. (US 4290105 A, hereafter referred to as Cichelli).

35 U.S.C. 102(b) rejection of claims 21, 23 and 25.

Poole substantially teaches the claimed invention described in claims 1, 8 and 15 (as rejected above).

However Poole does not explicitly teach the specific use of lexicographically ordered data.

Cichelli, in an analogous art, teaches use of lexicographically ordered data (col. 2 , lines 45-51 in Cichelli).

Art Unit: 2133

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Poole with the teachings of Cichelli by including use of lexicographically ordered data. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of lexicographically ordered data since a language dictionary is a data dictionary would have provided a translation method that efficiently uses resources and costs less (col. 3, lines 1-4 in Poole).

Allowable Subject Matter

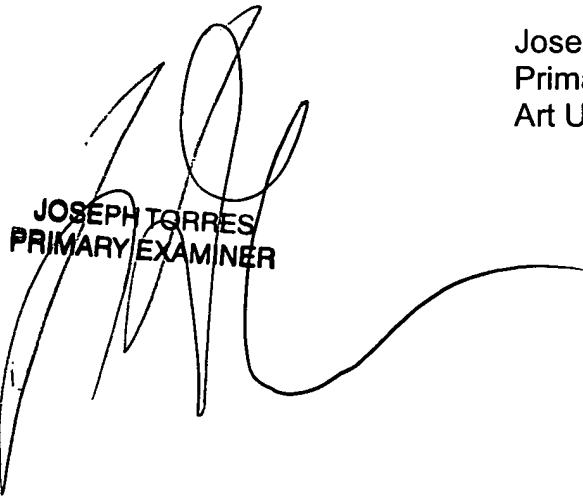
5. Claims 7, 14 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JOSEPH TORRES
PRIMARY EXAMINER

Joseph D. Torres, PhD
Primary Examiner
Art Unit 2133